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ABSTRACT

A curriculum activity was initiated to provide preservice teachers with a personal knowledge base of active research procedures through the use of class-related activities. A research component was included in a required preservice class in assessment. Following the principles of scaffolding theory, students who had studied the elements of research were provided the opportunity to apply their knowledge through actual research experiences. Students received an introduction to behavioral research and then more specific information regarding the use of and actual practice with event recording and time sampling techniques. Cohorts in the class who received training separately then used examples of each technique to observe the class and review the results with the class. All students then independently gathered observational data in non-classroom settings and discussed their results in class. Followup surveys of the students indicated satisfaction with this method of teaching research techniques, and students indicated more self-confidence as they gained more experience in the observer role. (Contains 14 references.) (JLS)

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# Combining Standards with Changing Teacher Needs: Introducing Teacher Research Strategies to Preservice Teachers

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TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

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**Combining Standards with Changing Teacher Needs: Introducing Teacher Research Strategies to Preservice Teachers**

Faculty and administrators in teacher education programs are being required to reevaluate their philosophies and practices to meet the conditions imposed by both standards for accreditation as well as challenges in meeting the needs of children. Teachers are required to possess greater knowledge bases than those who were certified even a decade ago (Alley & Jung, 1995; Cuickshank & Metcalf, 1990; Darling-Hammond, 1996; Feiman-Nemser, 1990; Ladson-Billings, 1995; & Levine, 1996) . Teacher education programs are trying to meet this demand by enhancing and even cramming more information and experiences into their programs leading to debates about the optimal matriculation time (Jones-Wilson, 1996; Stallings & Kowalski, 1990). My paper is an attempt to demonstrate one way of establishing a knowledge base of active research procedures through infusing research into a required class in assessment. The result is a group of preservice teachers who have demonstrated the fundamentals of research--posing questions, operationalizing terms, collecting and analyzing data, and finally, either drawing conclusions or posing questions for future research.

Preservice teachers must have an exposure to both assessment and research. This exposure will help teachers construct a knowledge base of research as well as assessment practices along with limitations and advantages so that these teachers may be active participants in the both processes, not just consumers of data. The ideal teacher would then understand the process well enough to be an effective liaison between the educational institution and the parents and community, as well as an advocate for best practice in assessment in order to secure the best assessment measures and evaluators for the student.

Additionally, preservice teachers should not only study current research, but also apply it to their future teaching. I believe that at this point the preservice teachers' knowledge bases break down. From a constructivist approach, learners (i.e., preservice teachers) must build their own understanding of the concepts in order to use them (Spivey, 1997). Unfortunately, research is usually presented in an abstract fashion such as citations in textbooks, or published articles that the

student must secure and "analyze" or keep on file in idea banks. Rarely are the preservice teachers exposed to the process of research. Exposing teachers to the process would enhance their comprehension of the current knowledge base and increase their analytical skills. In fact, preservice teachers rarely are given the privilege of seeing research as a dynamic process. Consequently, I have observed that while many can read and summarize articles detailing current research, they have difficulty critically analyzing it for its usefulness, applying the research to themselves, or seeing themselves as vital parts of the research community (see also Holt-Reynolds, 1995). This is a serious problem for future educational change because as the demographics of students in the public schools change over the next 30 years, teachers will have to take a more active role in leading educational research to "best practices" and "best policies". To this end, we will have to have teachers in the field that can see more application of a particular research finding than a generic and mind-numbing "I think that this is a very good article and I plan to use it in my teaching"[1].

With these problems identified, I decided to insert a research component into a required preservice teachers' class in assessment. Students were already learning many of the terms and ideas about research that form the foundation including validity, reliability, assumptions of testing, and the mastery of basic statistics in order to further comprehend standardized test score reports. Vygotskian theory uses scaffolds to take a learner from one step to the next. It was decided that one of the next logical steps should be for the preservice teachers to complete an actual research study. Given the confines of the time, it was then decided to keep the research to a bare bones idea of generating a research question, identifying a population of interest, determining what behaviors would be examined, how those behaviors would be operationalized, creating a codesheet, collecting the data, completing a simple analysis of the data, and drawing conclusions.

The research was grounded in an area that the preservice teachers had a great deal of practice with--watching their peers. The decision was made to confine the research population to peers in order to utilize the most familiar context to test the new skills. After introducing the students to the idea of doing behavioral research, and I had to alleviate the initial sense of "panic".

Therefore, to demonstrate the applicability of research and observation techniques I asked the class where were good places to observe "behavior" or just to people watch. This generated a fertile ground of potential places to gather data. Next, we discussed how to operationalize the variables observed so that someone not with them could know exactly what they were observing and including in a more generic category such as "boredom". In fact, I found that the more outrageous the behavior, the easier it was to operationalize. They were then instructed that they could choose between observing at least five levels of one general behavior, or at least five unrelated behaviors that were grouped in a general theme such as "playing a video game". Ground rules for ethical research were established including: (1). use no real names to preserve confidentiality; (2). do not engage in research, no matter how intriguing, that they would not wish someone to complete on them; (3). the class itself was off-limits; (4). keep the language and tone neutral; and (5). report what was found, even if this was contrary to what they expected to find. These students had read the dubious history of intelligence testing, and it was felt that as new researchers, if they were trained correctly, they would not be as likely to make the mistakes of others.

The research training was simple. Students were given information and practice in using event recording and time sampling techniques. Cohorts in the class who had been trained secretly to use an example of each, then presented results of watching areas of the room for such behaviors as off-task and on-task (both had been operationalized beforehand). The process was reiterated during the next class period. This second period of instruction produced even more comprehension questions, demonstrating that there is more than one way to construct knowledge. We all need a foundation, but not all of us start laying it at the northwest corner.

Following the initial examples, students gathered at least 20 minutes of data. Their write-ups of their research were short, but contained many of the same benchmarks of more traditional research. Specifically, their write-ups included the actual codesheets that they constructed to collect their data, their codebooks which detailed how they operationalized their behaviors, and a one to two page synopsis of their research questions, what they did, what they found, and their interpretations of their research.

The results were intriguing. Social settings, worship services, study groups, and classes became research areas. As expected, a few did the minimum. Others employed creativity, humor and insight. Some tried the impossible, such as collecting data on a group of 50 students in a class, but still came back with insights into classroom management and educational practice that seemed to be a reflection of what was found. In fact, of the sample of 25 research projects, eight tried to observe ten or more subjects at the same time. Eleven of the projects examined small groups of less than seven, and four of the projects looked at either single subjects or the behavior of a single couple. Two of the preservice teachers actually chose to observe in an elementary school, thus skipping the more familiar step to try their skills in their professional field.

Further analysis revealed spontaneous use of limiting strategies. Some observed first, then designed their codesheets in order to to back and capture the behaviors being demonstrated ("After watching the boys play Mortal Kombat II for a while I came up with what I call the six types of video game players"). Others increased the amount of time that they observed in order to chart differences such as females vs. males, or early vs late classes.

At the time they submitted there research projects, eighteen members of second class in assessment agreed to complete a short questionnaire concerning their feelings about the research. Of these 18, five reported no prior experience in research, nine reported that they had participated in one or two projects, and four reported participating in three or more research projects. When asked about their feelings upon hearing about the required research project, most of those without much experience expressed confusion, reluctance, and neutrality. Those with more experience tended to view it more positively. After the second class training session they reported feeling much more excited and confident. My last question moved the preservice teachers from the now familiar to the slightly unfamiliar. When asked on a one to five scale (with five being "difficult") how easy would it be for them to create a second "study" to observe classroom behaviors in a school, the mean for the total group was 1.56 indicating that they felt more confidence.

This research training had another motive. As teachers in classrooms that would be more and more inclusive, they would have to be able to separate feelings from facts in assessing

students. The terms "hyperactivity", "slow", and "gifted" have been shown over time to be as much a reflection of teacher perception as of actual child behavior. Consequently, the effective and reflective teacher would need to be able to construct and objectively use some type of measure to determine if the difference is merely one of perception or of actual difference. One added bonus that I observed was the preservice students' new abilities to operationalize behaviors that they saw in schools. The preservice teachers needed to experience the fact that research is not static, nor confined to a laboratory, nor are they outside of the research arena. Through participation in the research activity they can perceive themselves to be a part of the research culture and invest more effort in the active analysis and evaluation of existing research, hopefully resulting in more direct involvement in research and policy making activities[2].

These results generate further questions. First, will the experience help to create teacher researchers? Second, will the experience aid the preservice teachers in their analyses of published research? Third, will the skills generalize to other situations in the classroom where the teacher might need to collect data (e.g., precision teaching, behavior interventions, portfolio creating)? Fourth, will it lessen some of the subjectivity in teaching? Fifth, will it strengthen the bonds between university- and field-based research?

**Notes:**

[1]This was stated in one way or another in more papers than I care to count, starting with my own.

[2]A student from one class immediately used her new skills to research how children grades 4-5 make friends. She designed her codesheet--a questionnaire, not covered in the assessment class, got permission from a school to distribute it, collected her data, analyzed it, and presented her findings in another of my classes.

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